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This preliminary report discusses a study designed to test whether improved organizational problem solving could be produced in a school faculty by training in interpersonal communication skills. The training intervention, in a junior high school, used exercises designed to increase awareness of interpersonal and organizational processes. Rather than attempt to improve the personal development of individuals, the goal was to increase the effectiveness of the faculty as a working body. Issues that thwarted organizational functioning included: (1) Insufficient role clarity of the principal, vice principal, counselors, and department coordinators; (2) failure to draw on staff resources, especially between academic departments; and (3) low staff involvement and participation at meetings of committees, departments, and full faculty. Posttraining questionnaires pointed to favorable improvement. A related document is EA 002 557. (LN)

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IMPROVING ORGANIZATIONAL PROBLEM-SOLVING IN A SCHOOL FACULTY

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Improving Organizational Problem-Solving in a School Faculty

Abstract

An intervention was aimed at improving the flexible organizational problem-solving of a junior high school faculty. It was pointed toward organizational development, not personal change. Even though the emotional reactions of faculty members were considered in designing the training events, our intervention remained fixed on organizational roles and norms and their interrelationships. We hoped to learn whether improved organizational functioning could be produced in a faculty by integrating group training in communication and problem-solving with the normal business of the school. We began our intervention just prior to the academic year and returned intermittently until February.

Data evaluating the effects of the intervention support the claim that a number of salutary outcomes were at least partly due to the intervention. Movement in favorable directions occurred in a number of concrete, observable organizational changes, in verbally expressed attitudes about the principal and staff meetings, in the kinds of innovations reported, and in the changing organizational norms of the faculty. Strengths and weaknesses of the intervention are discussed.

Improving Organizational Problem-Solving in a School Faculty

Like many organizations with traditional modes of operation, schools are suffering stresses to which their customary practices seem ill-adapted. When faced with massive changes in the community, there are at least two strategies a school can adopt. One is for the school to remodel itself into a form maximally adapted to the new demands of the community, e.g., the middle school, the campus school, the unitized school, and the community school. The other strategy is to build new norms and procedures that enable the school constantly to monitor the changing community, to compare the results of its own reactions with what it would accept as movement toward its goals, and to establish new forms whenever the movement toward the goals falls below a criterion. This latter kind of strategy we call flexible organizational problem-solving. John Gardner (1963) has called it self-renewal, and Walter Buckley (1967) has referred to it as morphogenesis. The purpose of this project was to improve the capability of a school for organizational problem-solving.

From the point of view of research, our purpose was to test whether improved organizational problem-solving could be produced in a school faculty by training in interpersonal communication skills, where

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the group processes to be altered and the methods of doing so were consistent with McGregor's thinking (1967). We assumed, along with McGregor, that functions within organizations are "carried" through interpersonal interactions and that heightening abilities for organizational problem-solving must commence with new norms for interpersonal openness and helpfulness. In seeking a lever with which to change group norms, we adopted McGregor's strategy:

> ...to provide opportunities for members of the organization to obtain intrinsic rewards from contributions to the success of the enterprise.... The task is to provide an appropriate environment -- one that will permit and encourage employees to seek intrinsic rewards <u>at work</u> (pp. 13-14).

We did this by inviting the faculty to state the frustrations they encountered in the school and to practice a sequence of problem-solving steps to reduce these frustrations. This activity led to reduced frustrations and to the satisfactions of knowing that others valued the contribution one had made to outcomes highly desired by the faculty. It also facilitated changes in organizational norms by requiring staff members to behave in new ways in the actual work-group while others could observe the new behaviors and by allowing staff members to see that their colleagues actually accepted the new patterns of behavior in the setting of the school.

In designing this intervention, we made strong use of the laboratory method (Bradford, Gibb, and Benne, 1964). The training often called for conscious observations of the group processes of the faculty; the design required actually practicing new behaviors before using them in daily work. Although the design made use of the school as its own laboratory, we made use of laboratory groups in ways very different from

sensitivity training or the T-group. Personal development was not our target. We did not attempt to improve the interpersonal functioning of individuals directly; when this occured, it was incidental. Our targets were the faculty as a whole and several sub-groups within it. We sought to increase the effectiveness of groups as task-oriented entities. We tried to teach sub-groups within the school, and the faculty as a whole, to function more effectively as working bodies carrying out specific tasks in that particular job-setting. This strategy of training was supported by a recent review of research by Campbell and Dunnette (1968) on the transfer of skills from T-groups to organizations. They found that a T-group, as ordinarily conducted with focus on individual growth in a setting away from the job and without guided application to work-a-day tasks, has had little effect on organizational development.

In comparison to other efforts at bringing about more effective organizational functioning in schools, our intervention contained a unique combination of three features. First, our training took place with actual groups from the school we sought to affect. Next, we carried on training with the entire staff of the school, including secretaries, the head cook, and head custodian as well as all the faculty and its administrators. Finally, during the training, especially in its early parts, we rotated sizes and memberships of sub-groups so that every pair of staff members interacted with each other in more than one kind of group.

Training Goals

The major training goals were developed out of a conception of flexible organizational problem-solving. We hoped that the faculty

of our experimental school would establish a continuing series of activities for improving its own communication; we held this to be a minimum necessity. Further, we hoped that participation at faculty meetings as well as the initiation of attempts at influence would spread to more and more members of the faculty. We strove to help the faculty to increase its discussions about interpersonal or inter-role problems and to continue to make conscious use of a sequential problem-solving technique. We hoped that the teachers would show increased initiative in solving problems they were having with those in higher echelons and that the initiator of an idea would test his idea more frequently than previously with a lower-echelon sub-group before carrying it to the administration. For us the most significant goals had to do with structural and instructional changes in the school. We hoped that the staff would invent some new organizational forms within their school or at least borrow some from our training that would help them to confront problems continuously. Finally, we wanted the teachers to find some uses for the new forms and methods from the training that would have effects on their classroom instruction.

We supplemented these broad goals with more specific ones in designing the initial training events that centered on interpersonal skills and systematic problem-solving. We hoped first to build increased openness and ease of interpersonal communication among the faculty by training them in skills of paraphrasing, describing behavior, describing own feelings, and perception checking. We hoped that through skillful constructive openness with one another that the staff would develop an increased confidence that communication could have worthwhile outcomes. We hoped to increase skills of giving information to others about their

behaviors and of receiving information about one's own behavior. After increasing communication skills, we hoped to stimulate skill development in using a systematic problem-solving procedure and in helping colleagues to enunciate ideas clearly that might develop into practical plans for solving organizational problems.

Intervention

We assumed that the faculty of our experimental school would be likely to attempt new interpersonal procedures if it could first practice them away from the immediate demands of the school day. At the same time, we assumed that transfer to everyday work of the building would be maximized if the faculty expected to continue problem-solving activities on their own after each training event and if the training design called for additional training some weeks and months following the first event. Within this general framework for transfer of organizational training, we made several other assumptions.

We felt that communication could be improved, that feelings of solidarity could be increased, and that power differences could be clarified if virtually every pair of persons on the faculty were brought into face-to-face interaction during the initial training period. Next, we thought that the initial input during training should pose a discrepancy between the ideal and actual performances of the faculty. Out of confrontations with discrepancies would come problem-solving. We felt that applications to the work of the school building would be maximized if the faculty dealt with real organizational problems even during the first week of training. Furthermore, we thought that training in a series of overlapping small groups would help individuals to use the skills

learned in one group in each of the next training groups, and subsequently, to transfer the accumulated skills to groups in which they work ordinarily. Finally, we assumed that the transfer of the communication and problem-solving skills to the school would be facilitated if the faculty members conceptualized the possible applications of the skills and made plans to try them out in the real school setting.

The training commenced with a six-day laboratory in late August of 1967. Staff members present included almost the entire building staff other than students. There were 54 trainees: all administrators, all faculty but two, the head cook, head custodian, and head secretary. The first two days were spent in group exercises designed to increase awareness of interpersonal and organizational processes; e.g., the NASA Trip-to-the-Moon exercise, the five-square puzzle, and the hollow-square puzzle. Although these exercises were game-like, they demonstrated the importance of clear and effective communication for accomplishing a task collaboratively. After each exercise, small groups discussed ways in which the experience was similar or different from what usually happened in their relations with one another in the school. All staff members then came together to pool their experiences and to analyze their relationships as a faculty. Each small group chose its own way to report what it had experienced. Openness and giving and receiving feedback about perceptions of real organizational processes in the school were supported by the trainers. Brief but specific training was given in clear communication, overcoming difficulties in listening, and skills in describing another's behaviors. A couple of non-verbal exercises augmented this practice.

The faculty devoted the last four days to a problem-solving sequence, working on real issues that were thwarting the organizational functioning of the school. After a morning of discussion and decisions, which also served as practice in the skills of decision making, three problems emerged as the most significant:

(1) Insufficient role clarity, especially in the roles of principal, vice-principal, counselors, and area (departmental) coordinators.

(2) Failure to draw upon staff resources, especially between academic areas but also within subject matter specialities.

(3) Low staff involvement and low participation at meetings of committees, areas, and the full faculty.

Three groups formed, each to work through a problem-solving sequence directed toward one of these problems. Each group followed a procedure having five steps: (1) identifying the problem through behavioral description, (2) diagnostic force-field analysis, (3) brainstorming to find actions likely to reduce restraining forces, (4) designing a concrete plan of action, and (5) trying out the plan behaviorally through a simulated activity involving the entire staff.

Each of the three groups carried through its sequence of steps substantially on its own; the trainers served as facilitators, rarely provided substantive suggestions and never pressed for results. The group concerned with clarifying roles reasoned that an ambiguous role often served as a defense and that a first step must be to increase trust among the faculty. Accordingly, they carried out four non-verbal exercises to increase trust among the faculty. The group on using staff

resources set up eight sub-groups, each of which was to pretend to be a junior high faculty meeting a crisis due to lack of texts; each group then developed curricula drawing upon one another's resources. The group on low staff involvement arranged for three groups to have discussions on role clarification, staff resources,, and staff involvement. During the discussions, the more loquacious members were asked one after another to stop participating until there were only two members left. Discussions were then held in each group on feelings toward involvement cn the staff.

The first week of the training culminated with a discussion to highlight the resources on the staff. Staff members described their own strengths and those of their colleagues. Finally, they discussed what their school could be like if all the strengths of the faculty were used.

During the early fall, we interviewed all faculty members and observed a number of committees and subject-area groups to determine what uses they were making of the first week of training. The data indicated that problems still unresolved were communicative misunderstandings, role overload, and capabilities for group problem-solving.

The second intervention for training with the entire staff was held for one-and-one-half days in December. In this session we attempted to increase the effectiveness of the area coordinators as communication links between teachers and administrators, to increase problem-solving skills of the area groups and the principal's advisory committee, to help the faculty explore ways of reducing role overload, and to increase effective communication between service personnel and the rest of the staff. Training activities included communication exercises, problem-solving

techniques, decision-making procedures, and skill development in group observations and feedback. On the first day, area (departmental) groups applied problem-solving techniques to their own communication difficulties and received feedback from observing area groups on their methods of work. Problems raised in area groups were brought the next day to a meeting of the Principal's Advisory Committee held in front of the rest of the staff. Staff observed the Advisory Committee in a fishbowl arrangement, participated in specially designed ways, and later gave feedback on how effectively the committee had worked and how accurately members had represented them.

The third training intervention also lasted one-and-one-half days and took place in February. The main objecitve was to take stock of how the staff had progressed since the workshop in solving the problems of using resources, of role clarity, and of staff participation, and to revivify any lagging skills. A group discussion of each problem-area was held. Each teacher was left free to work in the group considering the problem that most interested him. Each group discussed the positive and negative outcomes associated with its problem. For example, in the group discussing staff participation, the question was: "In what ways has staff participation improved and where has it failed to improve?" The group wrote out examples of improvements, no changes, and regression in staff participation. The groups then focused on the negative instances and tried to think of ways to eliminate them by modifying organizational processes in the school. Faculty members continued with this activity in small groups during the spring without our presence.

Organizational Changes

One source of evidence for the effects of the training came in the form of concrete, observable changes in the behaviors of faculty and administration in our experimental school. These data were taken primarily from spontaneous events that were later reported to us and corroborated by the parties involved or by disinterested observers. These actions were not directly a part of our planned training events and therefore constituted movements in the direction of increased flexible organizational problem-solving.

About three months after the first week of training, a sample of the faculty was interviewed and also asked to write essays on the effects of the training. From these data, we discovered that at least 19 teachers were applying techniques learned in the organizational training to improve the group processes in their classrooms. Application typically involved such group procedures as "using small groups for projects," "using non-verbal exercises to depict feelings about the subject matter being studied," "using theatre-in-the-round or fishbowl formations for having students observe one another," "using a paraphrasing exercise to point out how poor classroom communications are," "using the problem-solving sequence and techniques in social studies classes to learn more about social problems," and "using small groups for giving and receiving feedback about how the class is going." As far as we know, none of these practices was used by these teachers before the organizational development laboratory.

Previous to our intervention, a group of eight teachers called the "Teach Group" was granted freedom to alter schedules, classroom

groupings, assignment of teachers to classes, and other logistics in attempts to maximize their educational impact on a selected group of students. The group, made up mostly of area coordinators, received many negative reactions from other staff members. They were envied, misunderstood, and often engaged in conflict with others. Their innovative ideas were more often resisted than emulated. However, the organizational training seemed to ameliorate the distrust, and the end of the year saw the Teach Group's type of collaboration extended to twice as many teachers. At the same time, two other teachers decided to form another team themselves to gain some of the advantages of mutual stimulation and the sharing of resources.

The Principal's Advisory Committee, made up of administrators and area coordinators, was changed from advisory to a more powerful force in the school. It became a representative senate with decision-making prerogatives. During the training event in December, this group delineated and accepted their roles as representatives of their areas and as gatherers of information for the upper echelon administrators. Later, an actual occurrence lent credence to the power of the advisory committee. Members of the mathematics area decided that they were under-represented on the committee because their area coordinator held responsibilities in the district as a curriculum consultant. They petitioned the principal through the advisory committee for a new area coordinator and one was chosen. The primary criterion for selecting the person to fill the position seemed to be his recent improvements in interpersonal and group skills. Later in the school year, the advisory committee requested two other training events to help them clarify their role in the decision-

making structure of the school.

A number of other events indicated that the quality of relationships on the staff improved because of the intervention. For instance, only two teachers initiated resignations from the staff at the end of the school year, giving the school a turnover rate of only three percent. Comparative rates in other junior high schools in the same district ranged from 10 to 16 percent. Several times during the year, faculty meetings were initiated by faculty members other than the principal. Such initiations ran counter to tradition but nevertheless those meetings went very smoothly with strong participation from many.

During the spring of 1968, faculty members initiated a meeting to discuss the possibility of having another group-process laboratory before the next school year. Faculty members first discussed the idea in area groups and later asked to meet as a total staff to present recommendations to the advisory committee. The laboratory or workshop was to have two goals: (1) to socialize new faculty members into this "group-oriented" staff, and (2) to give teachers new skills to use with their classroom groups. The workshop actually took place, without our active participation, in August, 1968.

The principal's interpersonal relationships with staff members were noticeably improved, and he became very excited about improving even more his own leadership skills. He requested funds to attend an NTL Educator's Laboratory and was granted them. Later, he served as an assistant trainer in a laboratory and performed with great effectiveness. That same summer, six members of the faculty planned to go to a laboratory in group processes and eventually did go at their own expense.

Perhaps the most dramatic changes after the intervention occurred in the school district. First, a new job was created at our experimental school; namely, vice-principal for curriculum, to act as consultant on interpersonal relationships to task groups within the staff. The role also called for providing liaison between groups, providing logistic support for curricular efforts, transmitting to upper echelons in the district the proposals for curricular development originating at the school, and serving as a liaison with other junior high schools in the district concerning innovations in curriculum. This new vice-principal was asked by the Superintendent to maintain a log of his activities and to develop a job description for possible use in other schools. This was done, and the school board granted funds for this position in several other junior highs. The curricular vice-principal, first to hold the role, has been asked to aid the other new vice-principals in learning the new role. Other schools in the district have requested funds for organizational development training in their schools and the introduction of the facilitator role as a vice-principalship.

Comparisons With Other Schools

The previous section contained descriptions of directly observable outcomes reflecting commitments to action within the school. This section reports comparisons of data taken from questionnaires administered early and late during the 1967-68 school year at the experimental school with data from six junior high schools in the New York City area and four junior high schools near the Seattle area. None of the New York or Seattle schools was engaged in our kind of organizational training; in their demographic characteristics, too, they met some of the

requirements for a control group.

The data for comparing our school with the New York schools came from two questionnaires, one dealing with the faculty's feelings about the principal's behavior and the other dealing with the faculty's feelings about staff meetings. The data for comparing the experimental school with the Seattle schools came from questions concerning innovations adopted, readiness to communicate about interpersonal relations, and readiness to use and share the resources of other staff members.[1]

The Principal

The questionnaire used to measure the faculty's feelings about the principal contained 24 items. Twelve of the items were used by Gross and Herriott (1965) to measure the Executive Professional Leadership (EPL) of elementary school principals; the remaining twelve items were developed by the Cooperative Project on Educational Development (COPED) instrument committee to measure managerial support and social support of the principal for his staff.

The facet of educational leadership studied by EPL deals with the principal's efforts to improve the quality of performance of his staff. Gross and Herriott (1965) found EPL to be related to the morale of the staff, the professional performance of teachers, and learning by students. Hilfiker (1969) used the same instrument and found that both

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[1]The data from the junior high schools near New York were kindly provided by the Cooperative Project on Educational Development (COPED). Some of the questionnaire items used with the schools near Seattle were adapted from items used by COPED; some others were adapted from items kindly suggested by Ray Jongeward and Michael Giammetteo of the Northwest Regional Educational Laboratory. For a description of COPED, see Watson (1967).

EPL scores and social support scores were related to school systems' innovativeness. Because of these findings we felt that the items in this questionnaire were reasonable indicators of the direction the interaction of faculty and principal would take if our training of the faculty approached its goals.

EPL was measured by asking teachers to what extent their principal engaged in activities such as the following:

> Makes teachers' meetings a valuable educational activity.
>
> Treats teachers as professional workers.
>
> Has constructive suggestions to offer teachers in dealing with their problems.

A principal's managerial support was measured by items such as the following:

> Makes a teacher's life difficult because of his administrative ineptitude.
>
> Runs conferences and meetings in a disorganized fashion.
>
> Has the relevant facts before making important decisions.

A principal's social support was measured by items such as the following:

> Rubs people the wrong way.
>
> Makes those who work with him feel inferior to him.
>
> Displays integrity in his behavior.

To compare the teachers' responses to this questionnaire at the experimental school with the responses at the six junior high schools near New York City, we performed a series of chi-square analyses. For every item and every school, we let the pretest results be the estimate of expected proportions against which to test the proportions obtained

at the posttest -- the proportions, that is, of teachers responding in one of six proferred categories. A summary of the analyses appears in Table 1, where the schools near New York are labelled A through F.

Table 1. Numbers of items showing significant changes ($p \leq .10$) among those in the questionnaire on the principal.

	School						
	Exp'l	A	B	C	D	E	F
Positive change	18	1	2	0	0	5	9
No significant change	6	19	17	12	13	19	11
Negative change	0	4	5	12	11	0	4

The results leave little doubt that the faculty of the experimental school changed its perceptions of the principal much more than did any of the other school staffs. At the experimental school, the teachers changed significantly ($p \leq .10$) on 18 of the 24 items; more importantly, every one of these 18 changes was in the positive and supportive direction. In contrast, in no other school, except for School F, did the teachers change on more than half of the items. Furthermore, in schools A, B, C, and D more of the changes were in a negative direction, indicating that the principal was being viewed less in accord with the EPL ideal at the end of the school year compared with the fall. The staffs of schools E and F changed more positively than negatively, but on far fewer items than at the experimental school.

Specifically, the teachers at our school were reporting that

their principal was easier to get along with, made better decisions, helped them more in their own problem-solving, improved faculty meetings and conferences, and treated them more as professionals after our training had been completed than before. Staffs at junior high schools in the New York City area not undergoing organizational training did not report similar changes in their principals' behavior.

Staff Meetings

We were concerned about staff and committee meetings because they are important formal arenas in which communication and group problem-solving can occur. Our early conversations with the staff at our experimental school revealed that low participation at staff meetings was viewed as an acute problem. We hoped that improvements in the conduct of meetings would occur as a result of the organizational training. To measure such change, we used a questionnaire to measure educators' responses to the meetings in their schools developed by the COPED instrument committee and reworded in minor ways by us. The questionnaire contains 37 items and has yielded excellent reliability.[2] The total score and subscale scores from this instrument have been found to be related to a school system's innovativeness (Hilfiker, 1969).

The 37 items describe specific behaviors; teachers are asked to rate each in one of six categories of frequency of its occurrence at staff meetings. The following are sample items from the instrument:

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[2] The total test was analyzed by Warren Hagstrom using Frank Baker's test-analysis package at the University of Wisconsin. Using a sample of 625 school professionals, including both teachers and administrators who described a wide variety of meetings and types of meetings, a reliability (Hoyt analysis-of-variance method) of .96 was found for the total score.

When problems come up in the meetings, they are thoroughly explored until everyone understands what the problem is.

People come to the meeting not knowing what is to be presented or discussed.

People bring up extraneous or irrelevant matters.

Either before the meeting or at its beginning, any group members can easily get items on to the agenda.

People don't seem to care about the meeting, or want to get involved in it.

People give their real feelings about what is happening during the meeting itself.

When a decision is made, it is clear who should carry it out, and when.

In a manner identical to the questionnaire dealing with the principal, pretest responses for each item and from each school were used as expected frequencies for evaluating shifts in posttest data. Data about staff meetings were available only from three of the six comparison schools; namely, A, C, and D. Table 2 summarizes the chi-square analyses applied to these data. Like the results on the changed perceptions of the

Table 2. Numbers of items showing significant changes ($p < .10$) among those in the questionnaire on staff meetings.

	Schools			
	Exp'l	A	C	D
Positive change	21	3	2	6
No significant change	14	30	32	23
Negative change	2	4	3	8

principal, the results on staff meetings also show major differences between the changes at the experimental school and the changes at the comparison schools. Among the 37 items, our school showed significant positive change in 21, school A in 3, school C in 2 and school D in 6. Changes at our school were almost entirely in the positive direction; among 23 significant changes ($p < .10$) only two were negative. In contrast, changes in the comparison schools could hardly have been more evenly balanced between positive and negative. The nature of the items on the questionnaire permit us to conclude that members of the experimental school reported that they could be more open, had improved the conduct of their meetings, dealt with problems more completely, had more commitment to the meetings and solutions emerging from meetings, and felt that meetings were more worthwhile after completing our organizational training.

Innovations

The experimental school and four junior high schools from two cities near Seattle were administered an instrument as part of a larger project. One of the questions in the instrument was:

> How about recent changes that could have useful effects on your school? Have there been any innovations, any new ways of doing things, that began during the last year or two that you think could have helpful effects in the school? If so, please describe each very briefly below. If none, write "none."

Teachers' responses to this item were coded into 14 categories according to the nature of the innovations they mentioned; for this report, we have gathered these categories into the four types shown in Table 3. "Packaged" innovations include curricular changes, establishing new

Table 3. Numbers of teachers mentioning four types of innovations.

Type of Innovation Mentioned	Schools					
	Exp'l Dec. '67 N=46	W N=30	X N=30	Y N=34	Z N=44	Exp'l May '68 N=39
"Packaged:" curriculum, new jobs, equipment, program evaluation	18	25	11	36	22	15
Instrumental in achieving new forms of organization	9	0	3	1	1	16
New methods of problem-solving or new organizational structure	21	1	1	0	1	17
Non-specific improvements and vague answers.	6	0	0	0	0	6

Note. Schools W, X, Y, and Z answered the questionnaires in January 1968.

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jobs or duties, acquiring equipment, and adopting methods of evaluating programs. We describe these as "packaged" because some tangible set of materials or instructions usually goes along with the innovation such as teaching materials, specifications for a new job, TV equipment, or instructions for a bookkeeping method. Moreover, innovations under this heading can usually be put into effect by training individuals; it is not often necessary to establish delicate new role relations or new modes of group problem-solving for innovations like this to be successful. Packaged innovations were mentioned more frequently in three of the schools near Seattle (labelled W through Z in Table 3) than in the

experimental school.

Another cluster of innovations contained those instrumental in achieving new forms of organization and new methods of solving organizational problems. Here we included relations between teachers and students, sharing power among the faculty, and changes in frequency or content of communication, as well as new training of any kind and new attitudes without mention of accompanying actions in organizational arrangements. Although the total number of responses in these categories was generally low by comparison with the first set of "packaged" innovations, mentions from the experimental school were more frequent than mentions from any of the other four junior high schools.

Innovations of primary importance to our training goals were new methods of solving problems or making decisions and new organizational structure such as committees, channels, and conference groups. Table 3 shows that teachers at the experimental school reported many more innovations in this area than the other junior high schools.

Norms about Interpersonal Communication

We asked the faculty at the experimental school and the faculties at the four junior high schools near Seattle to answer a set of seven questions about their readiness to talk about feelings. Three of the seven questions were:

> Suppose a teacher (let's call him or her Teacher X) disagrees with something B says at a staff meeting. If teachers you know in your school were in Teacher X's place, what would most of them be likely to do? Would most of the teachers you know here seek out B to discuss the disagreement?
>
> ( ) Yes, I think most would do this.
> ( ) Maybe about half would do this.
> ( ) No; most would not.
> ( ) I don't know.

Suppose you are in a committee meeting with Teacher X and the other members begin to describe their personal feelings about what goes on in the school; Teacher X quickly suggests that the committee get back to the topic and keep the discussion objective and impersonal. How would you feel toward X?

( ) I would approve strongly.
( ) I would approve mildly or some.
( ) I wouldn't care one way or the other.
( ) I would disapprove mildly or some.
( ) I would disapprove strongly.

Suppose Teacher X feels hurt and "put down" by something another teacher has said to him. In Teacher X's place, would most of the teachers you know in your school be likely to avoid the other teacher?

( ) Yes, I think most would.
( ) Maybe about half would.
( ) No; most would <u>not</u>.
( ) I don't know.

Taking those respondents who did not skip the question or answer "I don't know," we analyzed the responses to these seven items.[3] We found that the faculty at the experimental school reported that more teachers would (1) seek out another person with whom they had a disagreement, (2) tell another teacher when they had been hurt by the other teacher, (3) be less approving of a teacher who tried to cut off talking about feelings in a committee meeting, and (4) be more approving of a teacher who shared his own feelings at a faculty meeting than were reported by teachers from the four schools near Seattle. There was no significant difference between the teachers at the experimental school and other teachers in (5) their estimation of the proportion of teachers who would keep a disagreement to themselves (most in all schools felt most would do so).

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[2] Schmuck and Runkel (in press) present analyses of frequencies of I-don't-know answers and omissions.

On the other hand, many more teachers in the schools near Seattle than in our school claimed that their fellow teachers would (6) not avoid another teacher and (7) would not tell their friends the other teacher was hard to get along with if the other teacher had hurt them or "put them down."

On balance, we believe these results indicate that after our intervention the faculty at the experimental school, to a greater degree than the faculties near Seattle, were more open in their interpersonal communication and were more willing to talk about their feelings.

Norms about Sharing Ideas and Helping Others

Along with items reflecting norms about interpersonal communication, 12 items in the questionnaire concerned a faculty's readiness to ask for help from other staff members and give help to them. Here are three examples:

> Suppose Teacher X develops a particularly useful and effective method for teaching something. In Teacher X's place, would most of the teachers you know in your school describe it briefly at a faculty meeting and offer to meet with others who wanted to hear more about it?
>
> ( ) Yes, I think most would do this.
> ( ) Maybe about half would do this.
> ( ) No; most would not.
> ( ) I don't know.
>
> Suppose Teacher X develops a particularly useful and effective method for teaching something. If X were to describe the method briefly at a faculty meeting and offer to meet further with any who wanted to know more, how would you feel about it?
>
> ( ) I would approve strongly.
> ( ) I would approve mildly or some.
> ( ) I wouldn't care one way or the other.
> ( ) I would disapprove mildly or some.
> ( ) I would disapprove strongly.
>
> Suppose Teacher X wants to improve his classroom effectiveness. If X asked another teacher to observe his teaching and then

have a conference about it afterward, how would you feel toward X?

( ) I would approve strongly.
( ) I would approve mildly or some.
( ) I wouldn't care one way or the other.
( ) I would disapprove mildly or some.
( ) I would disapprove strongly.

The faculty at the experimental school reported that they would (1) expect other teachers to report useful and effective teaching methods at faculty meetings, (2) seek administrative support to disseminate these methods, and would (3) approve to a significantly greater degree teachers who engaged in such activities than would faculties of the schools near Seattle. Several items concerned a teacher's attempts to improve his classroom effectiveness. The faculty at our school reported that (4, 5) teachers would ask others, including the principal, to observe their teaching and have a conference afterward, (6) would ask to observe a colleague's teaching to get new ideas, and (7, 8) would approve a teacher who did these things in significantly greater numbers than the faculties of the other schools. The remaining four items showed no significant differences. These results indicate that teachers at the experimental school were willing to share new ideas to a greater extent than in those schools where no organizational training had taken place. Furthermore, teachers at the experimental school were willing to take greater risks to improve their teaching effectiveness.

Lessons for Consultants

In this section, we discuss what the consultant can learn from this project that will help him in designing interventions to improve the organizational functioning of school faculties.

Special Nature of This Intervention

The training events in our intervention were aimed at improving the organizational problem-solving of a school faculty. The feature that most sharply sets this intervention off from other laboratory training events is that natural work-groups, not individuals, were trained to be more effective. The intervention attempted to influence ways in which the entire faculty or its sub-groups carried out their job-related tasks in the context of the school. This was, in other words, a training intervention pointed toward organizational development, not personal development. At the same time, it is an inescapable truism that role occupants are persons and that the trainees are persons. It is only an abstraction, a way social scientists conceptualize things, to say that roles are different from the persons in a particular organization. Persons sometimes invest so much of their personal existence in a role (and this is perhaps particularly true of educators) that strong emotional reactions enter into organizational change of any kind. But even though the emotional reactions of persons always must be considered in designing even organizational development, our target remained fixed on roles and norms and their relationships. Organizational training as we conceive it aims at rearranging, strengthening, or in some way refurbishing the relationships among people in various positions in the school.

The Research Evaluation

From the point of view of research, we hoped to learn whether improved organizational problem-solving could be produced by carefully integrating training in communication and problem-solving skills within

the context of the living school, beginning the training just prior to the opening of school and continuing intermittently for some months. We interpret the data to support the claim that a number of desirable outcomes were at least partly due to our intervention. Many teachers began using a greater variety of more effective group techniques in their classrooms. Collaborating sub-groups of teachers increased in strength and number. The principal's advisory committee became more potently and specifically representative rather than merely advisory. Faculty turnover decreased well below the rates at the other junior high schools in the district. Additional training in organizational development during the summer following our intervention was initiated by the faculty, and a number of staff members, including the principal, sought training for themselves in communicative skills and group dynamics. The district established a new variety of vice-principal modeled after a role fashioned at the school following our intervention; the definition of the role included skills in group development and problem-solving.

These definite changes in organizational practice and structure were accompanied by changes in verbally expressed attitudes about the principal and staff meetings; the nature of reported innovations within the school; and norms concerning interpersonal openness, sharing of influence, and use of staff resources. These changes were found in the school where we conducted our organizational training, but not in other junior high schools not engaged in organizational training.

Strengths of the Summer Workshop

These outcomes indicate that improvements occurred in the school and we believe that the summer workshop was crucial in getting the project

off in a productive direction. Aspects of the design for a training activity like this one can be divided into macro and micro-aspects. Macro-aspects are the design's overall structure and outline, its sequence of parts, and the general forms through which the individual activities flow. Micro-aspects refer to the specific activities played out during any limited period. We feel confident in offering the following features as the most successful macro-aspects of the summer workshop.

(1) Including all members of the faculty. Almost the entire staff was included in the training right from the beginning. This meant that everyone learned about the goals of this training at the same time, that all were in the same circumstances vis-a-vis coping with the training activities, and that it was easy to transfer what was learned during the week to the school situation because staff members could remind one another of what happened at the workshop. The importance of everyone attending was underscored later when the two members of the staff who could not attend posed significant barriers to the staff's further development.

Even a few days difference can create distance and set up barriers between the trained and untrained. Perhaps the main reason is that one can feel a threat when others, especially those in roles comparable to one's own or those in roles that are removed only by one hierarchical level, develop skills or procedures that they might "use on you."

The faculty of a not-too-large elementary school or junior high school has no more than three levels of hierarchy: administrators, teachers, and non-professional personnel. For many purposes, there are only two layers, with the administrators comprising one layer and the

teachers and non-professional personnel the other. Such an organization is closer to a primary group than it is a bureaucracy. In a primary group, where role-takers relate to one another with more emotionality and individuality (compared to a more formal bureaucracy), there is no reasonable or legitimate way in which some can be chosen for special training while others are left out.

(2) Structured skill activities. The macro-design called for a sequence of training events that started with games and structured skill activities and moved to first steps in solving real organizational problems. This sequence appears to have worked well in two ways. First, we think that faculty members who attend a training event as a duty rather than by self-selection find their ways into new interpersonal modes more easily via structured skill exercises than through less structured experiences demanding more personal commitment such as the traditional T-group. The skill exercises were chosen because each one, in microcosm, demonstrated organizational issues reminiscent or role relationships in the school. An unstructured T-group probably would have led into considerations of particular interpersonal relationships within the staff; these, we believe, would have set the stage for personal development orientations and would have led away from a focus on organizational problems. Second, the results of the exercise led rather naturally into back-home problem-solving and seemed to set the stage for the choices of increasing role clarity, using staff resources, and increasing staff participation at meetings. Unstructured activities probably would have led into work on relationships between certain persons and led away from our goals of working at the organizational level.

(3) Rotating sub-group membership. The macro-design called for staff members rotating through groups of different sizes and compositions during the first few days. This was done to increase the potential network of workable relationships on the staff and to decrease the possibility of an in-group, out-group pattern emerging. Another goal of such rotating was to increase staff members' identification with the staff as a whole. We felt that some degree of identification with the whole would be necessary for the motivation that would be needed to carry the project through the year and rotating sub-group memberships appears to have increased the cohesiveness of the faculty.

(4) Equal treatment to all ranks. The design consciously contrived to reduce status differences on the staff. No member of the staff was singled out for any special treatment. Rotating the staff through various groups brought teachers and administrators together as well as non-professional personnel, teachers, and administrators. The exercise emphasized that persons within groups carry out tasks and that one attempts to do the best he can on a given task regardless of who happens to be in his group. Such an assumption brought staff members closer together -- a prerequisite to achieving more openness and clearer communication.

(5) Exemplifying new organizational forms in the training. Group processes, new group forms, and procedures for problem-solving were introduced in the design with the assumption that the use of such procedures by staff members would lead to new organizational structures. New structures were expected to arise out of problem-solving and we believe that the macro-aspects of the design encouraged that to happen.

Several micro-aspects of the design for the summer workshop warrant special attention because of their positive effects on the faculty.

(1) The fishbowl. The fishbowl arrangement, in which a group on the outside of a concentric circle observes a group in the inside working, became especially useful to this faculty. The arrangement used most often called for two or three empty chairs left in the inside group. Members of the outside group were invited to enter the inside when they chose to communicate something to the insiders. During the summer workshop, this pattern was used in the problem-solving phase late in the week. Later, in a follow-up session when the principal's advisory committee met in front of the rest of the staff, the same group formation was used. We learned that the faculty spontaneously employed such a formation several times during the school year to increase communication flow and participation between groups.

(2) Two-way communication. In several activities during the training we emphasized the importance of two-way communication. The impact on the faculty was great indeed, for it especially affected the shape of the area coordinator's role. Area coordinators were encouraged by their colleagues to serve as communication links between the principal's advisory committee and the area groups. This was an instance when learning about new processes motivated structural change. The new structure was similar to the link-pin organizational structure described by Likert (1961). Likert's link-pin structure uses small face-to-face groups as multiple-path communication channels in themselves; work units are organized across hierarchical levels and members participate in

group decisions at levels both above and below their own. In our school, the area coordinators were to represent their area colleagues in the principal's advisory committee and to communicate actions of that advisory committee back to the members of their area.

(3) Systematic problem-solving. Working through the problem-solving process step by step was another important micro-element. We returned to this problem-solving sequence many times. It became a convenient mnemonic device for staff members. They could easily keep the stages in mind and, in fact, made use of several of them spontaneously during the school year.

Strengths of the Training During the School Year

Next, we wish to describe the things we believe went especially well during the remainder of the period of intervention. Five training activities stand out as crucial aspects of the training during the school year. One was the fishbowl technique which we have already mentioned. The other forms were as follows:

(1) Interviews after summer training. The interviews brought our training staff psychologically closer to the faculty and gave us a number of key ideas for designing training events during the school year. We interviewed staff members during the hour set aside for them to prepare for their teaching. We interviewed some in groups and others individually. Where we seemed to get contradictory comments, we tried to probe for clarity or to go back to a person who had been previously interviewed to ask a few more questions. We tried to keep the interview process open to easy surveillance. All staff members knew that we were

at the school on the day of the interviews, the interviews were held in accessible spots in the school such as the teachers' lounge, and staff members were invited to sit in or near while others were being interviewed.

(2) Problem-solving in natural groups. During the first follow-up training session, we set up meetings of the area groups and asked them to carry out the problem-solving procedure. This simulation of a real meeting was a significant force in transferring learnings about problem-solving to new group procedures in the area groups during the school year.

(3) Review of progress before departure of trainers. A significant contribution to the total design occurred during the February follow-up session when the staff reviewed how far it had progressed toward solving its basic problems of role unclarity, low use of resources, and lack of participation at meetings. The session had three helpful effects: (a) It encouraged continuing discussions and collaborative problem-solving that had just begun to emerge, (b) It helped faculty members to recognize that they already had accomplished many positive things, and (c) It helped set the stage for a graceful departure of the training staff without also indicating that the project was over.

(4) Final unstructured session. A significant event in the total design was the unstructured session, in the manner of a T-group, held for a complete day with the principal's advisory committee. Members of the committee originated the session. Involvement on the part of most was very high and the results led to a strengthening of the group.

Weaknesses in the Summer Workshop

Certain features of our design were noticeably weak. We mention below some features we think could be bettered in another application.

(1) Making specific plans. First, we believe we should have encouraged the faculty to commit themselves to more specific and concrete action steps at the end of the summer workshop to be used in specific problem-solving processes back home. In essence, the problem-solving was learned as a process and used rather well later in the year, but more gains in terms of concrete actions could have come from the problem-solving if the faculty had been enabled to use action steps started at the workshop as a springboard.

(2) Dealing with absent persons. All but two staff members attended the summer workshop and they never were brought into the training psychologically. One attempt was made to bring one of the non-involved persons in by conducting a discussion about the workshop with that person together with three of her closest associates. At that meeting, events of the workshop were interpreted to the absent person and feelings within the group appeared to be supportive and positive. However, little improvement seemed to occur after that meeting. In retrospect, we feel that a session should have been designed in which the problem of informing those who were not present was dealt with openly and skillfully.

(3) Information-gathering techniques. The problem-solving sequence lacked attention to concrete techniques for diagnosing organizational processes. The training could have included some diagnostic tools in the form of self-report questionnaires, brief but systematic

interview schedules, and categories for observation that staff members could have used during the year to diagnose their own organization.

Weaknesses of Training During School Year

Three things may have had adverse effects during the school year.

(1) Demands on personal energy. Many teachers came to the training sessions after a difficult week of teaching. The training events constituted additional burdens for them to bear. We are now considering ways of arranging training episodes right within the context of the school day and having some success with meetings during free periods and by using substitutes part of the time. We are also making use of parts of vacations and the weeks soon before and after the school year.

(2) Changing trainers. Only two members of our training staff remained throughout the project. At times, the faculty was not sure who were our staff and who were not. Some of our own confusions probably sent confusing messages to the faculty.

(3) Clarity of expectations among trainers. Along with our own staffing difficulties, it should also be pointed out that our training plans often were not extensive and at points not sharply enough defined. This led to uneven performances, especially in sub-groups within the faculty, when different trainers were involved. We tried to correct for this by rotating trainers continuously.

In conclusion, this project was salutary for a school faculty, and contains valuable lessons for consultants or change agents. For us, it serves too as a preface to a series of forthcoming interventions in schools with different structures.

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